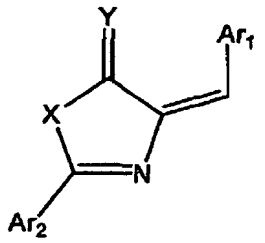
WHAT IS CLAIMED IS:

1. A glucagon-like peptide-1 receptor agonist having the following structural formula:

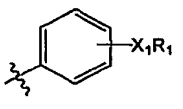


wherein, each of Ar_1 and Ar_2 independently is phenyl or substituted phenyl, and the substituent groups of the said substituted phenyl is one, two or three groups optionally selected from the following group: alkyl; hydroxyl; substituted alkoxyl or alkylamino which contains the substituent groups including halogen, alkoxyl or hydroxyl; substituted alkanoylxy or alkanoylamino which contains the substitutent groups including halogen, alkoxyl or hydroxyl; C_2-C_6 alkenyl substituted with oxygen or amine, phenyl, benzyl, C_2-C_6 enoyl, C_3-C_6 cycloalkanoyl, benzoyl, substituted benzoyl which contains optional one, two or three substituent groups including alkoxyl and alkanoylamino, benzyloyl, thenoyl, tert-butoxycarbonyl, adamantane formoxyl, and mandeloyl; alkoxyl; alkylamino; cycloalkoxyl; cycloalkylamino; amino; amide; alkoxycarbonyl; cycloalkoxycarbonyl; alkanoylxy; alkanoylamino; cycloalkanoylxy; cycloalkanoylamino; carbamido; urylene; alkanoyl; nitro; carboxyl; and aldehyde group;

X is O, S, or NH; and

Y is O or S.

2. The glucagon-like peptide-1 receptor agonist according to the claim 1, being characterized in that

when Ar_1 is 

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wherein R_1 is any one of the following substituent groups: H; alkyl; substituted alkyl which contains the substituent groups including halogen, alkoxyl or hydroxyl; C_2-C_6 alkenyl; C_3-C_6 cycloalkyl; phenyl; benzyl; alkanoyl; substituted alkanoyl which contains the substituent groups including halogen, alkoxyl or hydroxyl; C_2-C_6 enoyl; C_3-C_6

cycloalkanoyl; benzoyl; substituted benzoyl which contains optional one, two or three substituent groups including alkoxyl and alkylamino; tert-butoxycarbonyl; benzyloyl; thenoyl; adamantane formoxyl; and mandeloyl; and X_1 is O or NH,

Ar_2 is 

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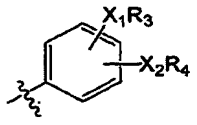
wherein R_2 is any one of the following substituent groups: H; alkyl; substituted alkyl which contains the substituent groups including halogen, alkoxyl or hydroxyl; C_2-C_6 alkenyl; C_3-C_6 cycloalkyl; phenyl; benzyl; alkanoyl; substituted alkanoyl which contains the substituent groups including halogen, alkoxyl or hydroxyl; C_2-C_6 enoyl; C_3-C_6 cycloalkanoyl; benzoyl; substituted benzoyl which contains optional one, two or three substituent groups including alkoxyl and alkylamino; tert-butoxycarbonyl; benzyloyl; thenoyl; adamantane formoxyl; and mandeloyl; and X_2 is O or NH;

or Ar_2 is 

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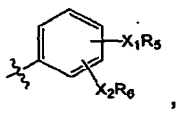
wherein each of R_3 and R_4 independently is any one of the following substituent groups: H; alkyl; substituted alkyl which contains the substituent groups including halogen, alkoxyl or hydroxyl; C_2-C_6 alkenyl; C_3-C_6 cycloalkyl; phenyl; benzyl; alkanoyl; substituted alkanoyl which contains the substituent groups including halogen, alkoxyl or hydroxyl; C_2-C_6 enoyl; C_3-C_6 cycloalkanoyl; benzoyl; substituted benzoyl which contains optional one, two or three substituent groups including alkoxyl and alkylamino; tert-butoxycarbonyl; benzyloyl; thenoyl; adamantane formoxyl; and mandeloyl; and X_1 is O or NH; X_2 is O or NH.

3. The glucagon-like peptide-1 receptor agonist according to the claim 1, being characterized in that,

when Ar_1 is 

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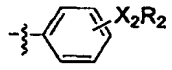
wherein each of R_5 and R_6 independently is any one of the following substituent groups: H; alkyl; substituted alkyl which contains the substituent groups including halogen, alkoxyl or hydroxyl; C_2-C_6 alkenyl; C_3-C_6 cycloalkyl; phenyl; benzyl; alkanoyl; substituted alkanoyl which contains the substituent groups including halogen, alkoxyl or hydroxyl; C_2-C_6 enoyl; C_3-C_6 cycloalkanoyl; benzoyl; substituted benzoyl which contains

optional one, two or three substituent groups including alkoxyl and alkylamino; tert-butoxycarbonyl; benzyloyl; thenoyl; adamantane formoxyl; and mandeloyl; and X_1 is O or NH; X_2 is O or NH,

Ar_2 is 

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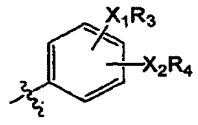
wherein R_2 is any one of the following substituent groups: H; alkyl; substituted alkyl which contains substituent groups including halogen, alkoxyl or hydroxyl; C_2-C_6 alkenyl; C_3-C_6 cycloalkyl; phenyl; benzyl; alkanoyl; substituted alkanoyl which contains substituent groups including halogen, alkoxyl or hydroxyl; C_2-C_6 enoyl; C_3-C_6 cycloalkanoyl; benzoyl; substituted benzoyl which contains optional one, two or three substituent groups including alkoxyl and alkylamino; tert-butoxycarbonyl; benzyloyl; thenoyl; adamantane formoxyl; and mandeloyl; and X_2 is O or NH;

or Ar_2 is 

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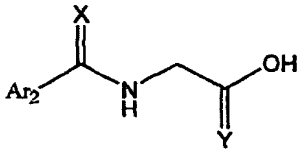
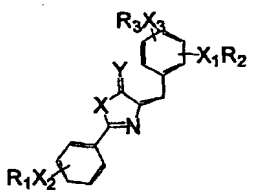
wherein each of R_3 and R_4 independently is any one of the following substituent groups: H; alkyl; substituted alkyl which contains substituent groups including halogen, alkoxyl or hydroxyl; C_2-C_6 alkenyl; C_3-C_6 cycloalkyl; phenyl; benzyl; alkanoyl; substituted alkanoyl which contains the substituent groups including halogen, alkoxyl or hydroxyl; C_2-C_6 enoyl; C_3-C_6 cycloalkanoyl; benzoyl; substituted benzoyl which contains optional one, two or three substituent groups including alkoxyl and alkylamino; tert-butoxycarbonyl; benzyloyl; thenoyl; adamantane formoxyl; and mandeloyl; and X_1 is O or NH; X_2 is O or NH.

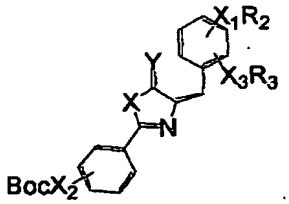
4. A process for preparing the glucagon-like peptide-1 receptor agonist according to the claim 1, being characterized in that, the said agonist is prepared by condensating

the compound 

and Ar_1CHO, wherein each of Ar_1 and Ar_2 independently is phenyl or substituted phenyl, wherein the substituent group of the said substituted phenyl is one, two or three groups optionally selected from the following group: nitro; carboxyl; aldehyde; tert-butoxycarbonyl and thenoyl substituted with oxygen or amino; X is O, S or NH; and Y is O or S.

5. A process for preparing the glucagon-like peptide-1 receptor agonist according to

the claim 1, being characterized in that, the compound  is prepared

by condensating the reaction product of compound  and trifluoroacetic acid with the compound R_1COX_4, wherein R_1, R_2 and R_3 are any one of the following substitutent groups: H; alkyl; substituted alkyl which contains the substituent groups including halogen, alkoxyl or hydroxyl; C_2-C_6 alkenyl; C_3-C_6 cycloalkyl; phenyl; benzyl; alkanoyl; substituted alkanoyl which contains the substituent groups including halogen, alkoxyl or hydroxyl; C_2-C_6 enoyl; C_3-C_6 cycloalkanoyl; benzoyl; tert-butoxycarbonyl; substituted benzoyl which contains optional one, two or three substituent groups including alkoxyl and alkylamino; benzyloyl; thenoyl; adamantane formoxyl; and mandeloyl; X is O, S, or NH; Y is O or S; each of X_1, X_2 and X_3 independently is O or NH; and X_4 is Cl or OH.

6. The processes for preparing the glucagon-like peptide-1 receptor agonist according the claims 4 or 5, being characterized in that, the solvent used in condensation reaction is dichloromethane, acetic anhydride, tetrahydrofuran, dimethylfuran, dichloroethane, toluene, benzene, water, dioxane or any mixture thereof.

7. The processes for preparing the glucagon-like peptide-1 receptor agonist according the claims 4 or 5, being characterized in that, the reaction temperature is from -78°C to the room temperature, or the heating temperature is from 50□ to 230□.

8. The processes for preparing the glucagon-like peptide-1 receptor agonist according the claims 4 or 5, being characterized in that, pyridine, triethylamine, diethylpropylethyl amine, DMAP, N-methylmorpholine, or isobutyl chloroformate is used as activator in condensation reaction.

9. Use of the glucagon-like peptide-1 receptor agonist according to claim 1 as medicaments for treating the carbohydrate metabolism disturbance-related diseases such as type II diabetes, insensitivity to insulin or obesity, etc.